

# PATENT COOPERATION TREATY

Alston & Bird

From the INTERNATIONAL SEARCHING AUTHORITY

**PCT** AUG 6 2001

To:  
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REGISTERED

Received By                       
INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

Applicant's or agent's file reference <b>35800/208933</b> 5800-206-1	Date of mailing (day/month/year) <b>27/07/2001</b>
International application No. <b>PCT/US 01/ 04536</b>	<b>PAYMENT DUE</b> within <b>45</b> <del>XXXX</del> days/days from the above date of mailing
Applicant <b>MILLENNIUM PHARMACEUTICALS, INC.</b>	International filing date (day/month/year) <b>12/02/2001</b>

1. This International Searching Authority

- (i) considers that there are 3 (number of) inventions claimed in the international application covered by the claims indicated ~~XXXX~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~XXXX~~ on the extra sheet:

- (ii) ☒ has carried out a partial international search (see Annex)      ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:

**see subject 1. on extra sheet**

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

2. The applicant is hereby invited, within the time limit indicated above, to pay the amount indicated below:

EUR 945,00      x      2      =      EUR 1.890,00  
 Fee per additional invention      number of additional inventions      total amount of additional fees

Or, \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☒ Claim(s) Nos. see remark have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority  
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Authorized officer

Mireille Claudepierre

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-23, all partially

Protein having at least 60% identity to the G-protein coupled receptor protein "17724" as represented by seq.ID.2, nucleic acid encoding it or having 60% identity to seq.ID.1, vector comprising said nucleic acid, host comprising said vector, method for producing said protein using said host, method for identifying an agent which binds to or modulates the activity of said protein, antibody specific for said protein, methods for detecting the presence of said protein or said nucleic acid, and use of said binding compound to modulate the activity of said protein.

2. Claims: 1-23, all partially

Protein having at least 60% identity to the G-protein coupled receptor protein "31945" as represented by seq.ID.5, nucleic acid encoding it or having 60% identity to seq.ID.4, vector comprising said nucleic acid, host comprising said vector, method for producing said protein using said host, method for identifying an agent which binds to or modulates the activity of said protein, antibody specific for said protein, methods for detecting the presence of said protein or said nucleic acid, and use of said binding compound to modulate the activity of said protein.

3. Claims: 1-23, all partially

Protein having at least 60% identity to the G-protein coupled receptor protein "50228" as represented by seq.ID.8, nucleic acid encoding it or having 60% identity to seq.ID.7, vector comprising said nucleic acid, host comprising said vector, method for producing said protein using said host, method for identifying an agent which binds to or modulates the activity of said protein, antibody specific for said protein, methods for detecting the presence of said protein or said nucleic acid, and use of said binding compound to modulate the activity of said protein.

G-protein coupled receptors (and hence also 7-TM proteins) and their uses are known from e.g. W09846620 and W09963087.

In the light of this prior art, the problem underlying the present application has been defined as the provision of further G-protein coupled receptor proteins and nucleic acids encoding them.

The solutions lie in the provision of the proteins:

1. "17724",
2. "31945",
3. "50288", and nucleic acids encoding them.

In view of the fact that G-protein coupled receptors are already known, due to the essential difference in primary structures and

putative functions of the receptors of the solutions, and since no other special technical feature, common to these solutions could be distinguished, the ISA is of the opinion that there is no single inventive concept underlying the plurality of claimed inventions of the present application within the sense of Rule 13.1 PCT. Consequently there is a lack of unity and the different inventions, not belonging to a common inventive concept, are formulated above as the different subjects on the communication pursuant to Art. 17(3)(a) PCT.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 206

Continuation of Box 3.

Although claims 21 and 22 in as far as they pertain to in vivo use are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

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1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 64576 A (BURGESS CHRISTOPHER C ; BUSHNELL STEVEN E (US); CARROLL EDDIE III ( ) 16 December 1999 (1999-12-16) * see seq.ID.510 *	1,3-5,7, 8,16-18
X	--- DATABASE EMBL [Online] Entry HS408N23, Acc.no. Z98048, 24 July 1997 (1997-07-24) HUNT, A.: "Human DNA sequence from clone RP3-408N23 on chromosome 22q13..." XP002171470 * see nt. 96680-97100 *	1,3-5,7, 16
A	--- WO 98 46620 A (MILLENNIUM PHARM INC) 22 October 1998 (1998-10-22) the whole document	
A	--- WO 99 63087 A (HODG MARTIN R ; GLUCKSMANN MARIA ALEXANDRA (US); MILLENNIUM PHARM I) 9 December 1999 (1999-12-09) the whole document	
P,X	--- DATABASE EMBL [Online] Entry HS057D181, Acc.no. AL365514, 12 July 2000 (2000-07-12) COLLINS, J.E. ET AL.: "Novel human gene mapping to chromosome 22." XP002171471 the whole document -----	1-3,5, 7-9,12

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

**Patent Family Annex**

Information on patent family members

International Application No

PCT/US 01/04536

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9964576 A	16-12-1999	AU 4053699 A EP 1086213 A	30-12-1999 28-03-2001
WO 9846620 A	22-10-1998	US 5891720 A AU 6973698 A EP 1007536 A	06-04-1999 11-11-1998 14-06-2000
WO 9963087 A	09-12-1999	AU 4544999 A EP 1084241 A	20-12-1999 21-03-2001